

**CALENDAR ITEM**

**C52**

A 70  
S 33, 34

04/05/16  
W 17168  
E. Tajer

**CONSIDER ACCEPTANCE OF THE  
LONG BEACH UNIT ANNUAL PLAN  
(JULY 1, 2016, THROUGH JUNE 30, 2017),  
LONG BEACH UNIT, WILMINGTON OIL FIELD,  
LOS ANGELES COUNTY**

**APPLICANT:**

City of Long Beach  
Long Beach Gas and Oil Department  
Attn.: Mr. Robert Dowell, Director  
2400 East Spring Street  
Long Beach, CA 90806

**BACKGROUND:**

In accordance with Chapter 138, Statutes of 1964, 1<sup>st</sup> Extraordinary Session and Chapter 941 of the Statutes of 1991 (Chapter 941) and the Agreement for Implementation of an Optimized Waterflood Program (OWPA) for the Long Beach Unit (LBU), the City of Long Beach (City), as Unit Operator and trustee for the State, submitted the LBU Annual Plan (July 1, 2016 through June 30, 2017) to the California State Lands Commission (Commission).

At its meeting on March 8, 2016, the Long Beach City Council adopted the proposed Annual Plan and authorized formal submission to the Commission. The Commission received the plan on March 10, 2016. As provided by Chapter 941, the Commission has 45 days to review the Annual Plan for consistency of the budget with the Five Year Program Plan (Program Plan) and make revisions. If the Commission makes no changes, the Annual Plan is deemed to be consistent with the Program Plan.

The Annual Plan is a requirement of the Optimized Waterflood Program Agreement (OWPA) entered into pursuant to Chapter 941, Statutes of 1991, and Chapter 138, Statutes of 1964, Extraordinary Session, respectively.

CALENDAR ITEM NO. **C52** (CONT'D)

**PROGRAM PLAN CONSISTENCY:**

Pursuant to Section 3 of Chapter 941, the Annual Plan, as submitted, is subject to review by the Commission for consistency with the budget of the current Program Plan. The Commission may revise the Annual Plan to make it consistent with the budget in the Program Plan. Pursuant to the OWPA, the changes ordered by the Commission must be in writing, fact driven, with the reasons set forth with specificity.

The proposed Annual Plan is a one-year plan submitted by the City covering fiscal year 2016-2017. The Annual Plan is an itemized budget of anticipated expenditures needed to carry out the Program Plan objectives. There are five expenditure categories in the Annual Plan: Development Drilling, Operating Expense, Facilities-Maintenance-Plant, Unit Field Labor and Administrative, and Taxes-Permits-Overhead. The proposed Annual Plan's total budgeted expenditure of \$229.1 million represents about a 38 percent (38%) decrease over the 2016-2017 budget of \$369.4 million contained in the current Program Plan. This change is consistent with reduction in project activity caused by low oil prices. Commission staff has concluded that the proposed Annual Plan is consistent with the objectives in the Program Plan.

**ECONOMIC PROJECTIONS IN ANNUAL PLAN:**

For 2016-2017, the City estimates the LBU net income will be \$36.5 million after total expenditures of \$229.1 million. This net income projection is based on the City's crude oil price forecast of \$35 per barrel (bbl) and a natural gas price of \$3 per thousand cubic feet (mcf). Most of the net income will be from oil revenues. The City forecasts oil production to average 20,107 bbl/day in 2016-2017. This rate assumes the continuation of development activity to involve a total of 24 wells to be re-drilled from existing wellbores over the Plan period. Expenditure levels and the types of development projects will be adjusted as necessary to respond to fluctuations in oil price and other economic conditions. With proposed 2016-2017 drilling activity (24 wells compared to 49 wells within the Program Plan) and 2016-2017 expenditure levels (\$45.1 million compared to \$92.1 million in the Program Plan), Commission staff expects oil production will be consistent with the Annual Plan's projection. Pursuant to Article 2, Paragraph 2.07 of the OWPA, the Field Contractor may exceed any budget category in the Plan budget up to 20 percent (20%), without obtaining additional authority from the City and the Commission.

CALENDAR ITEM NO. **C52** (CONT'D)

**OIL PRICE FORECAST:**

In planning the expenditures needed to accomplish LBU objectives, and the revenues needed to fund those expenditures, the City has used a crude oil price forecast of \$35/bbl. This oil price ensures that revenues will be sufficient to pay for LBU proposed expenditures and still provide net income to the State and the City's Field Contractor, California Resources Long Beach, Inc. (CRC), and its agent, THUMS Long Beach, Inc. (THUMS), and the other working interest owners.

Estimates prepared by Commission staff for State revenue projections for fiscal year 2016-2017 use an oil price forecast that reflects the current commodity price environment. The price for LBU crude in March 2016 has averaged \$30/bbl.

**REVIEW OF ANNUAL PLAN:**

Commission staff has reviewed the Annual Plan as submitted by the City and finds that the economic basis upon which the Program Plan was prepared will support and provide an engineering framework to meet the OWPA and LBU objectives. Commission staff has concluded that the Annual Plan is consistent with good oil field practice. The plan is based on all engineering and geologic information available at the time of preparation. Further, to support the conclusion that the Annual Plan was prepared to ensure good oil field practice, Commission staff maintains direct involvement in ongoing LBU development activities and the planning of future activities. Staff involvement includes, among other things, monthly meetings of an engineering committee, onsite inspector presence in the field, reservoir management consultation with the City and the Field Contractor, analysis of drilling safeguards involving blowout prevention equipment certification, oil spill prevention exercises, and subsidence monitoring and prevention. In addition, Commission staff has concluded that the Annual Plan is consistent with the OWPA, the Unit Agreement, and the Unit Operating Agreement, with particular reference to development and operations, subsidence prevention, preparation and submittal of plans of development and expenditures, re-pressuring operations, and drilling schedules. Commission staff also has concluded that the Annual Plan is consistent with the Program Plan. Due to lower oil prices, the drilling program has been adjusted accordingly. Staff concluded that this reduction is consistent with the decrease of the Unit revenue forecasted for FY 2016-2017.

**OTHER PERTINENT INFORMATION:**

1. The staff recommends that the Commission find that the acceptance of the subject Long Beach Unit Annual Plan does not have a potential for

CALENDAR ITEM NO. **C52** (CONT'D)

resulting in either a direct or a reasonably foreseeable indirect physical change in the environment, and is, therefore, not a project in accordance with the California Environmental Quality Act (CEQA).

Authority: Public Resources Code section 21065 and California Code of Regulations, Title 14, sections 15060, subdivision (c)(3), and 15378.

2. This action is consistent with the California State Lands Commission's 2016-2020 Strategic Plan, Strategy 1.5 - Ensure the highest level of environmental protection and public safety in the production and transportation of oil and gas resources, by applying Key Action 1.5.2 - Ensure lease and contract compliance with sound oil and gas development practices in compliance with regulatory and statutory requirements.

**EXHIBITS:**

- A. Letter from the City of Long Beach submitting the Long Beach Unit Annual Plan to the California State Lands Commission
- B. Long Beach Unit Annual Plan (July 1, 2016 through June 30, 2017)
- C. Oil Price Comparison Graph and Average Price Chart 2009-2015

**RECOMMENDED ACTION:**

It is recommended that the Commission:

**CEQA FINDING:**

Find that the acceptance of the subject Long Beach Unit Annual Plan is not subject to the requirements of CEQA pursuant to California Code of Regulations, Title 14, section 15060, subdivision (c)(3), because the subject activity is not a project as defined by Public Resources Code section 21065 and California Code of Regulations, Title 14, section 15378.

**AUTHORIZATION:**

Accept the Long Beach Unit Annual Plan (July 1, 2016 through June 30, 2017), Long Beach Unit, Wilmington Oil Field, Los Angeles County.

## EXHIBIT A

W 17168



EDWARD FARRELL  
ACTING DIRECTOR

2400 EAST SPRING STREET · LONG BEACH, CA 90806  
(562) 570-2000 · FAX (562) 570-2050

[www.lbgo.org](http://www.lbgo.org)

March 10, 2016

Ms. Marina Voskanian, Chief  
Division of Mineral Resources Management  
California State Lands Commission  
200 OceanGate, 12th Floor  
Long Beach, CA 90802-4331

**SUBJECT: SUBMISSION OF THE LONG BEACH UNIT ANNUAL PLAN (JULY 1, 2016 - JUNE 30, 2017)**

Dear Ms. Voskanian:

The City of Long Beach, as Unit Operator of the Long Beach Unit, and in accordance with Chapter 138, Section 5, Chapter 941, Section 3, and the Agreement for Implementation of an Optimized Waterflood Program for the Long Beach Unit, Article 2, submits ten copies of the Long Beach Unit Annual Plan (July 1, 2015 through June 30, 2016).

The Plan was approved by the Long Beach City Council on March 8, 2016. If you have any questions, please contact Mr. Kevin Tougas at (562) 570-3963.

Sincerely,

A handwritten signature in blue ink that reads "Edward Farrell".

EDWARD FARRELL  
ACTING DIRECTOR OF LONG BEACH GAS AND OIL

ED:kmf

Enclosures

cc: J. Lucchesi – California State Lands Commission  
F. Komin – California Resources Long Beach, Inc.  
R. Anthony – City of Long Beach

## EXHIBIT B

W 17168

### Long Beach Unit

#### **THUMS Long Beach Company** (Agent for Field Contractor)



## ANNUAL PLAN

July 1, 2016 through June 30, 2017



## ANNUAL PLAN

July 1, 2016 through June 30, 2017

### Table of Contents

	<u>Page</u>
Part I - Introduction .....	2
A. Plan Basis .....	3
B. Economic Projections.....	6
C. Major Planning Assumptions.....	7
Part II – Program Plan Schedules .....	8
A. Range of Production and Injection .....	8
B. Anticipated New & Redrilled Wells.....	9
Part III – Itemized Budget of Expenditures.....	10
A. Development Drilling .....	10
B. Operating Expense.....	10
C. Facilities, Maintenance and Plant .....	11
D. Unit Field Labor and Administrative .....	11
E. Taxes, Permits and Administrative Overhead.....	12
Part IV – Definitions .....	13
A. Modifications .....	13
B. Supplements .....	13
C. Final Report and Closing Statement .....	14

## Part I

### Introduction

This Annual Plan ("Plan") was developed to reflect anticipated activity levels during the fiscal period from July 1, 2016 through June 30, 2017 ("FY17"). It is being submitted as required by Section 5(a) of Chapter 138, Statutes of 1964, First Extraordinary Session, and as revised by passage of Assembly Bill 227 (Chapter 941, Statutes of 1991) and the Optimized Waterflood Program Agreement executed by the State of California, the City of Long Beach, and California Resources Long Beach, Inc. ("CRC"), the Field Contractor.

This Plan provides for drilling, producing, water injection, and other associated activities from offshore and onshore locations. The budget for these activities is grouped into the following five major categories:

<b>Plan Category</b>	<b>Fiscal Year 2016 – 2017 (\$ Million)</b>
Development Drilling	\$ 45.1
Operating Expense	\$ 70.2
Facilities, Maintenance, and Plant	\$ 55.3
Unit Field Labor and Administrative	\$ 33.1
Taxes, Permits, and Administrative Overhead	\$ 25.5
Total	\$229.1



## **A. Plan Basis**

This Plan was developed based on the parameters outlined in the Program Plan for the period July 2015 through June 2020 and provides current and updated estimates of volumes, drilling activity and expenditures for FY17.

### **Volumes**

Oil and gas production volumes are predicted to average 20.1 Mbopd and 8.0 MMcfd, respectively, in FY17. Water production for the period is expected to average 1,061.8 Mbwpd and water injection is expected to average 1,167.3 Mbwpd.

### **Revenue and Expenses**

A projected oil price of \$35.00/bbl Wilmington and gas price of \$3/mcf will result in revenues of \$265.7 million. Budgeted expenses for FY17 total \$229.1 million. Projected net profit in FY17 is \$36.5 million.

### **Drilling**

This Plan allows for drilling approximately 24 new and redrilled development and/or replacement wells. The plan sets a drilling pace equivalent to approximately three quarters of a drilling rig over the fiscal year. The rig utilization could potentially change due to variations in oil price and program performance. Workover rigs will perform drilling preparation and completion work.

The locations of production and injection wells to be drilled or redrilled are consistent with those given in the Program Plan (see attached Part II, Schedule 2B).

### **Maintenance**

Most of the major facility projects anticipated during the Plan period are required to maintain current equipment capabilities or to enhance operations. Other projects will be necessary to take advantage of improvement opportunities and to address changes in the oil field operating environment.

CRC has a Mechanical Integrity and Quality Assurance (MIQA) program to assess and maintain critical equipment in order to protect the environment to the maximum extent possible. The MIQA program is designed to meet internal and regulatory requirements and provide a high level of equipment integrity to reduce risk and increase reliability. Key elements include:

- Identification, evaluation, and determination of what equipment and/or process components are critical (i.e. their failure or malfunction could

adversely affect the safety of personnel, operations, and/or the environment).

- A process to ensure equipment and components comply with material specifications, design and construction codes or standards thus providing a measure of safety and reliability.
- Methodologies for inspecting, testing and maintaining the equipment and documenting such action.

The MIQA program is an integral piece of the overall flow of maintenance, from inspection/testing through maintenance and, when necessary, repairs or replacement. The program is supported through the use of a comprehensive database and work order system that provides control and management of all maintenance activities.

Many projects will be undertaken to repair or replace equipment that has outlived its useful life. Items needing to be repaired or replaced include, but are not limited to, facilities piping, tanks, and vessels. These projects are consistent with past activities to keep the Unit facilities in safe operating condition and reflect a forecast forward field life of 30-40 years.

### **Abandonment**

Wells and facilities with no further economic use will be abandoned to reduce current and future Unit liability. This Plan provides funds for plugging wells to surface, in-zone, and conditional abandonments.

### **Safety, Environmental, and Regulatory Compliance**

CRC is committed to conducting all aspects of its business in a manner that provides for the safety and health of employees, contractors and the public, and safeguards the environment in which it operates. Key safety programs include incident reporting and investigation, safety meetings and training, Management of Change (MOC), Process Hazard Reviews (PHR's), emergency response planning and drills, and a behavior based safety observation program. Key aspects of the environmental program include compliance with all laws and regulations, including South Coast Air Quality Management District (AQMD) requirements, waste management and minimization, spill prevention plans and Business Emergency Plans (BEP's).

The effectiveness and compliance of the above programs are assured through various internal audit programs. In addition, numerous agencies conduct periodic audits, including the CA State Lands Commission, Department of Transportation, State Fire Marshal, AQMD, Environmental Protection Agency, Long Beach Fire

and Health Departments, Port of Long Beach and City of Long Beach Gas & Oil Department.

Emergency response planning and preparedness is bolstered by partnering with Marine Spill Response Corporation (MSRC). MSRC is an independent, non-profit, national spill response company dedicated to rapid response to environmental incidents. MSRC has a major west coast base of operations in the Port of Long Beach and its equipment and expertise are readily available for emergencies and are incorporated in onsite training exercises. The training exercises also involve a close working relationship with the United States Coast Guard and California Department of Fish and Wildlife.

Environmental and community outreach is also a fundamental part of THUMS program and each of the Islands is currently designated as a 'Wildlife at Work' site by the Wildlife Habitat Council. This designation is awarded to facilities that provide for public education and involvement through wildlife related projects and learning opportunities on the facilities.

Projects relating to safety, environmental issues, or other situations necessary for meeting compliance with code, permit, or regulatory requirements will continue to be implemented under this Plan in accordance with all Unit agreements. In addition, CRC places additional emphasis on risk and system reviews and operational safeguards to assure reliable and compliant environmental performance.

### **Economic Review**

Project expenditures during the Plan period are subject to economic review through the Determination and Authority for Expenditure (AFE) processes. All existing wells are frequently reviewed in light of changing crude prices to determine if they are economic to operate. Well servicing work is justified on economics and other conditions consistent with good engineering, business, and operating practices.

CRC remains committed to careful management of subsidence related to its oil and gas production through strict adherence to existing regulations and voidage rules.

## B. Economic Projections

(Data in Millions of Dollars)

	BUDGET FIRST QUARTER FY17	BUDGET SECOND QUARTER FY17	BUDGET THIRD QUARTER FY17	BUDGET FOURTH QUARTER FY17	BUDGET TOTAL FY17
<b>ESTIMATED REVENUE</b>					
Oil Revenue	\$67.5	\$65.4	\$62.5	\$61.6	\$256.9
Gas Revenue	\$2.3	\$2.3	\$2.1	\$2.1	\$8.7
<b>TOTAL REVENUE</b>	<b>\$69.7</b>	<b>\$67.6</b>	<b>\$64.6</b>	<b>\$63.7</b>	<b>\$265.7</b>
<b>ESTIMATED EXPENDITURES</b>					
Development Drilling	\$8.2	\$8.1	\$14.4	\$14.4	\$45.1
Operating Expense	\$18.1	\$16.8	\$17.4	\$17.9	\$70.2
Facilities & Maintenance	\$13.5	\$13.3	\$14.6	\$13.9	\$55.3
Unit Field Labor & Administration	\$7.1	\$10.4	\$9.2	\$6.4	\$33.1
Taxes, Permits & Overhead	\$7.1	\$5.7	\$7.0	\$5.6	\$25.5
<b>TOTAL EXPENDITURES</b>	<b>\$54.0</b>	<b>\$54.3</b>	<b>\$62.6</b>	<b>\$58.2</b>	<b>\$229.1</b>
<b>NET PROFIT</b>	<b>\$15.7</b>	<b>\$13.3</b>	<b>\$2.0</b>	<b>\$5.5</b>	<b>\$36.5</b>

## C. MAJOR PLANNING ASSUMPTIONS

	BUDGET FIRST QUARTER FY17	BUDGET SECOND QUARTER FY17	BUDGET THIRD QUARTER FY17	BUDGET FOURTH QUARTER FY17	BUDGET TOTAL FY17
<b>OIL PRODUCTION</b>					
PRODUCED (1000 BBL)	1,927	1,868	1,785	1,760	7,340
(AVERAGE B/D)	20,946	20,300	19,838	19,344	20,107
<b>GAS PRODUCTION</b>					
PRODUCED (1000 MCF)	759	753	709	688	2,910
(AVERAGE MCF/D)	8,253	8,187	7,882	7,564	7,972
<b>WATER PRODUCTION</b>					
PRODUCED (1000 BBL)	100,938	98,597	94,660	93,409	387,605
(AVERAGE B/D)	1,097,156	1,071,708	1,051,775	1,026,477	1,061,779
<b>WATER INJECTION</b>					
INJECTED (1000 BBL)	110,988	108,398	104,061	102,684	426,130
(AVERAGE B/D)	1,206,389	1,178,234	1,156,228	1,128,400	1,167,313
OIL PRICE (\$/BBL)	\$35.00	\$35.00	\$35.00	\$35.00	\$35.00
GAS PRICE (\$/MCF)	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00

## Part II

### Program Plan Schedules

#### Schedule 2 A

#### Range of Production and Injection FY17

#### Long Beach Unit Program Plan, July 2015-June 2020

FISCAL YEAR	RANGE OF PRODUCTION AND INJECTION RATES									
	OIL MBOPD			WATER MBWPD			GAS MMCFPD			INJECTION MBWPD
2016/17	19.1	-	21.1	1,009	-	1,115	7.6	-	8.4	1,109 - 1,225

FISCAL YEAR	RANGE OF INJECTION PRESSURES			
	TAR PSI	RANGER PSI	TERMINAL PSI	U. P./FORD PSI
2016/17	1,500	2,500	2,500	2,500

**Schedule 2 B**  
**Anticipated New and Redrilled Wells**  
**Fiscal Year 17**  
**Long Beach Unit Program Plan, July 2015-June 2020**

Reservoir	CRB	Producers										Injectors									
		Grissom		White		Chaffee		Freeman		Pier J		Grissom		White		Chaffee		Freeman		Pier J	
		Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max	Min	- Max
SG Tar Ranger West			0 - 8	0	- 0	0	- 0		0 - 0	0	- 7	0	- 1	0	- 0	0	- 0	0	- 0	0	- 1
	1		0 - 2	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	2		0 - 3	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 2
	3		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 1	0	- 0	0	- 0	0	- 0	0	- 0
	4		0 - 3	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 1
	5		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 1	0	- 0	0	- 0	0	- 1	0	- 0
	7		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	8		0 - 0	0	- 0	0	- 0		0 - 1	0	- 0	0	- 0	0	- 0	0	- 0	0	- 1	0	- 0
	9		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	10		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
Ranger East	11		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	12		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	13		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 1
	36		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	37		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
			0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	14		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	15		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	16		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	17		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
Terminal	18		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	20		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	21		0 - 0	0	- 0	0	- 0		0 - 6	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	22		0 - 0	0	- 0	0	- 0		0 - 1	0	- 0	0	- 0	0	- 0	0	- 0	0	- 1	0	- 0
	33		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
			0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	24		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	38		0 - 1	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	39		0 - 3	0	- 0	0	- 0		0 - 0	0	- 2	0	- 1	0	- 0	0	- 0	0	- 0	0	- 0
	40		0 - 1	0	- 0	0	- 0		0 - 1	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
UP Ford	41		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	42		0 - 1	0	- 0	0	- 0		0 - 0	0	- 4	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	43		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	47		0 - 0	0	- 0	0	- 0		0 - 2	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
			0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	26		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	27		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	30		0 - 0	0	- 0	0	- 0		0 - 3	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	31		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	44		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
237	45		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	46		0 - 0	0	- 0	0	- 0		0 - 1	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
			0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
	30		0 - 0	0	- 0	0	- 0		0 - 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0	0	- 0
		Total										Total									
		0 - 44										0 - 11									

## **Part III**

### **Itemized Budget of Expenditures**

#### **A . Development Drilling \$ 4 5 . 1 M M**

The Development Drilling category of expenditures encompasses all new well and replacement well drilling activity, as well as maintenance and replacement of drilling equipment within the Unit. Funds for development drilling are based on the assumption that 24 wells will be developed and/or replaced during the Plan year using a drilling pace equivalent to approximately  $\frac{3}{4}$  of a drilling rig.

Drilling and completing new wells, as well as redrilling and recompleting existing wells, account for 96 percent of the funding provided in this Category. Included in these activities is funding for rig move-in, drilling and casing, completion activities, drilling rig in-zone plugs and conditional abandonments, and unscheduled activity (fishing operations, cement squeezing, special logging, contract drilling services).

Exact specifications regarding the distribution of wells, bottom hole locations, and completion intervals will be determined by CRC. These decisions will be influenced by contributions from reservoir engineering personnel, results from ongoing engineering studies, and new well performance. This information will be reviewed and approved in accordance with the various unit agreements during regularly scheduled meetings.

#### **B . Operating Expense \$ 7 0 . 2 M M**

The Operating Expense category of expenditures encompasses the ongoing costs of day-to-day well production and injection operations necessary for producing, processing, and delivering crude oil and gas, and for all electric power charges. Expenses for this category are based on estimated oil production of 20.1 Mbopd, estimated gas production of 8 MMcfpd, water injection requirement of 1,167 Mbwpd, and water production of 1,061 Mbwpd. Anticipated operating expenses were based on operating three workover rigs per month for servicing an average active well count of 761 producers and 469 injectors. These rigs will also be used for the completion of approximately 7 investment wellwork projects. Abandonment well count will be determined as a function of drilling activity and the number of idle wells with no future use identified.

The day-to-day costs for production and injection well subsurface operations represent approximately 44 percent of the funding provided in this category. Included are funds for recompletions, routine well work, well conversions, in-zone plugs, conditional abandonments, and other charges incurred for well maintenance.



Electricity makes up 56 percent of the funds in this Category. Cost for electric power is based on estimated kilowatt usage of 750,000,000 KWh at an average rate of \$0.0525/KWh. This cost includes all sources of Unit electrical power, including all costs associated with the power plant and electric utility purchases.

### **C. Facilities, Maintenance, and Plant \$55.3MM**

The Facilities, Maintenance, and Plant category of expenditures encompasses costs for maintenance, repairs, upgrades, additions of surface facilities and pipelines, and costs for general field services.

Approximately 68 percent of the funding in this category is for general field and operating costs. This includes, but is not limited to, charges for general labor, equipment rentals, and materials for general maintenance (painting, welding, electrical, etc.) of all Unit systems, such as oil gathering, treating, storage, and transfer; gas gathering and treating; scale and corrosion control; produced water handling; waste disposal; leasehold improvements; electrical system; fresh water system; fire protection and safety; marine operations; and automotive equipment. Funds are also provided for chemical purchases and laboratory-related charges for chemical treatment of produced and injected fluids; gas processing charges; make-up water; security; transportation; small tools; and other miscellaneous field activities.

Approximately 32 percent of the funding in this Category is for facilities repair and improvement projects. Approximately 35% of the repair project category is focused on inspection, maintenance and repair in support of the MIQA program. This work includes regulated pipeline inspection surveys and evaluation, inspection and repair of cathodic protection systems, and infrastructure piping integrity inspections not covered by regulatory control.

Improvement projects include spending for injection pumps, oil transfer pumps and other infrastructure related investments that position the Unit for longevity.

### **D. Unit Field Labor and Administrative \$33.1MM**

The Unit Field Labor and Administrative category of expenditures encompasses costs for Unit personnel and other Unit support activities.

Funding for Unit personnel includes costs of salaries, wages, benefits, training, and expenses of all CRC employees. These costs represent approximately 91 percent of the Category total.

Funding for Unit support activities includes, but is not limited to, costs for professional and temporary services necessary for the completion of support

activities; charges for data processing; computer hardware and software; communications; office rent; general office equipment and materials; drafting and reprographic services; DOT drug and alcohol testing; special management projects; and other miscellaneous support charges.

#### **E. Taxes, Permits, and Administrative Overhead \$25.5 MM**

The Taxes, Permits, and Administrative Overhead category of expenditures includes funds for specific taxes, permits, licenses, land leases, and all administrative overhead costs for the Unit.

Funding is provided for taxes levied on personal property, mining rights, and oil production; for the Petroleum and Gas Fund Assessment; annual well permits and renewals; Conservation Committee of California Oil and Gas Producers Assessment; California Oil Spill Response, Prevention, and Administration fee; land leases; and pipeline right-of-way costs. These costs represent approximately 86 percent of the Category total.

Funding is also provided in this Category for all Administrative Overhead (including Unit Operator billable costs and CRC billable costs) as called for in Exhibit F of the Unit Operating Agreement.

## **PART IV**

### **Definitions**

This Annual Plan may be Modified or Supplemented after review by the State Lands Commission for consistency with the current Program Plan. All Modifications and Supplements to this plan will be presented by the Long Beach Gas and Oil Department, City of Long Beach, acting with the consent of CRC, to the State Lands Commission in accordance with Article 2.06 of the Optimized Waterflood Program Agreement.

In addition, on or before October 1, 2017 the City of Long Beach shall present to the State Lands Commission a final report and closing statement of the FY17 Annual Plan, in accordance with the provision in Section 10 of Chapter 138.

#### **A. Modifications**

The City of Long Beach, acting with the consent of CRC, has the authority to cause the expenditures of funds for Unit Operations in excess of the amount set forth in the budget included in the Annual Plan, provided, however, that no such expenditure shall be incurred that would result in any category of expenditures set forth in the budget to exceed 120 percent of the budgeted amount for that category. A budget modification would be required for any expenditures which would cause a budget category to exceed its budgeted amount by 120 percent.

Any transfer of funds between budget categories or an augmentation or decrease of the entire budget may be accomplished by a budget modification in accordance with section 5(g) of Chapter 138 and Article 2.06 of the Optimized Waterflood Program Agreement.

Investment, facilities, and management expense projects commenced in prior budget periods, which are to be continued during the current budget period, may be added to this budget by a modification in accordance with Article 2.06 of the Optimized Waterflood Program Agreement.

#### **B. Supplements**

This Annual Plan contains all the investment and expense projects reasonably anticipated at the time the Plan was drafted and for which adequate detailed studies existed. Any significant and uncommon expenses not originally contemplated may be added to this budget or transferred by a supplement in accordance with Article 2.06 of the Optimized Waterflood Program Agreement.

The amount of the supplement shall include sufficient funds to complete the projects.

### **C. Final Report and Closing Statement**

The final report and closing statement for FY17 shall contain a reconciliation by category as finally modified and the actual accomplishments, including:

1. New wells and redrills by zone.
2. Facilities and capital projects.
3. Production by zone.
4. Injection by zone.

## EXHIBIT C

W 17168

